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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/029,204	12/28/2001	Kenji Shimizu	Q63141	5380

7590 06/01/2005  
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2100 Pennsylvania Avenue, N.W.  
Washington, DC 20037-3213

EXAMINER
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BERNATZ, KEVIN M

ART UNIT	PAPER NUMBER
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1773

DATE MAILED: 06/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/029,204

Applicant(s)

SHIMIZU ET AL.

Examiner

Kevin M Bernatz

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8,10,12-17 and 19-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8,10,12-17 and 19-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 June 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

## **DETAILED ACTION**

### ***Response to Amendment***

1. Amendments to claims 1, 16, 20 and 21, and addition of new claims 22 - 25, filed on January 14, 2005, have been entered in the above-identified application.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### ***Claim Rejections - 35 USC § 103***

3. Claims 1, 3, 4, 8, 10, 12, 14, 16 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shukh et al. (U.S. Patent App. No. 2002/0028357 A1) in view of Akiyama et al. (U.S. Patent No. 5,815,342) for the reasons of record as set forth in Paragraph No. 3 of the Office Action mailed on July 14, 2004.
4. Claims 2, 5 – 7, 13, 15, 17, 19 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shukh et al. in view of Akiyama et al. as applied above, and further in view of Tang et al. (U.S. Patent No. 5,750,270) for the reasons of record as set forth in Paragraph No. 4 of the Office Action mailed on July 14, 2004.
5. Claims 22 – 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shukh et al. in view of Akiyama et al. as applied above, and further in view of Sugita et al. (U.S. Patent No. 4,687,712).

Shukh et al. and Akiyama et al. are relied upon as described above.

Neither Shukh et al. nor Akiyama et al. disclose an orientation control layer meeting applicants' claimed thickness and/or material limitations.

However, Sugita et al. teach inserting nonmagnetic orientation control layers between a soft magnetic underlayer comprising a laminate structure and a perpendicular magnetic recording layer meeting applicants' claimed thickness and material limitations in order to improve the c-axis orientation of the magnetic layer (*col. 3, lines 31 – 40; col. 5, lines 9 – 16; embodiment 2; and Figure 9*).

It would therefore have been obvious to one of ordinary skill in the art at the time of the applicant(s) invention to modify the device of Shukh et al. in view of Akiyama et al. to utilize an orientation control layer meeting applicants' claimed structural and material limitations as taught by Sugita et al., since such a layer is known to improve the c-axis orientation of the magnetic layer.

### ***Response to Arguments***

**6. The rejection of claims 1 – 8, 10, 12 – 17 and 19 - 25 under 35 U.S.C § 103(a) – Shukh et al. in view of Akiyama et al., alone or in further view of Sugita et al.**

Applicants present several arguments which essentially break down into the position that the structure disclosed by Akiyama et al. for accomplishing the radial orientation taught therein is excluded by the presently claimed limitations. The examiner respectfully disagrees.

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Applicant(s) are reminded that “the test for obviousness is not whether features of the secondary reference may be bodily incorporated into the primary reference’s structure, nor whether the claimed invention is expressly suggested in any one or all of the references, rather the test is what the combined teachings would have suggested to those of ordinary skill in the art.” *Ex parte Martin* 215 USPQ 543, 544 (PO BdPatApp 1981). In the instant case, Akiyama et al. is principally relied upon to teach that of the possible “directions” of the orientation shown in Shukh et al., one of ordinary skill in the art would have been motivated to make the direction radial. The means of achieving the radial orientation utilized by Akiyama et al. are *not* required by the Shukh et al. invention, since Shukh et al. provides a vast teaching of the various ways by which the orientation of the soft magnetic layers can be controlled to achieve a preferred orientation (*see Shukh et al., Paragraph 0037*). The Examiner can point to the use of externally applied fields during deposition/annealing of the soft magnetic layers as one of many methods by which to achieve the desired radial orientation without the need for additional layers being present. Hence, applicants’ arguments regarding the inappropriateness of the Akiyama et al. structure incorporated into the Shukh et al. structure vis a vis the present claims is moot since the rejection of record is not predicated upon a physical incorporation of such a structure.

***Conclusion***

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M Bernatz whose telephone number is (571) 272-1505. The examiner can normally be reached on M-F, 9:00 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on (571) 272-1284. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KMB  
May 27, 2005

  
Kevin M. Bernatz, PhD  
Primary Examiner